IPv6 in the Federal Government

XTalks Webinar

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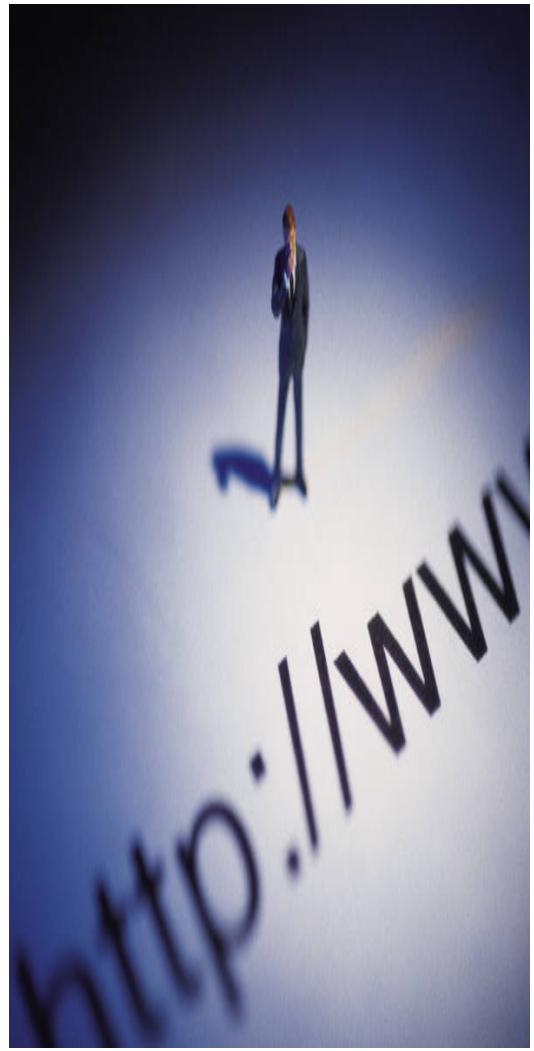
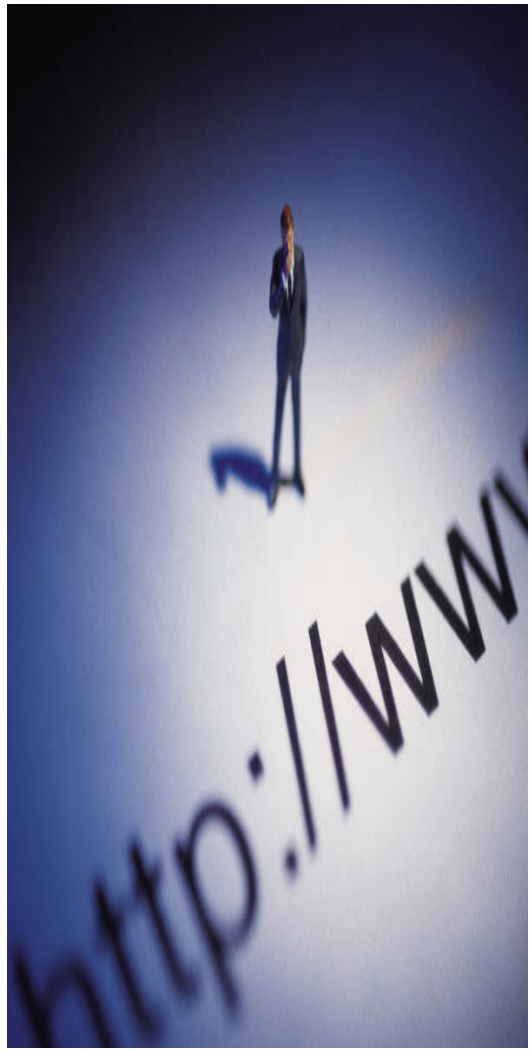
Agenda

- What is IPv6?
- Why is the Federal Government mandating IPv6?
- OMB Memorandum 05-22
- How will OMB gauge agency progress with IPv6?
- What else is being done to support agencies?
- What IPv6 guidance will be published?
- Guiding principles for IPv6 planning
- Review



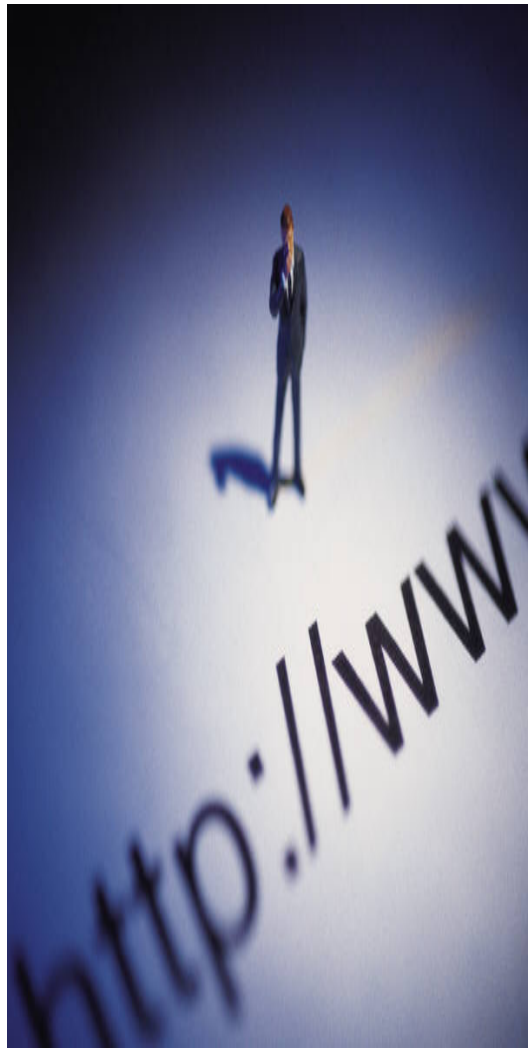
What is IPv6?

- IP (Internet Protocol) is the “language” used by computers to pass data over the internet
- IPv6 is a new version of the Internet Protocol (IP)
- Designed to overcome limitations of IPv4



Why is the Federal government mandating IPv6?

- **Enable future development of new net-centric devices, applications, and services**
- **International competition**
- **Lead by example**
- **Serve as market catalyst**



What does OMB Memorandum 05-22 instruct agencies to do?

By November 15, 2005

- Identify an IPv6 agency lead
- Complete 1st inventory of IP-aware hardware devices in network backbone

By February 28, 2006

- Develop a network backbone transition plan for IPv6
- Complete an IPv6 progress report

By June 30, 2006

- Complete 2nd inventory of IP-aware applications and peripherals with dependencies on network backbone
- Complete an IPv6 transition impact analysis

By June 30, 2008

- Complete network backbone transition to IPv6

How will OMB gauge agency IPv6 backbone progress?

OMB will use:

OMB Enterprise Architecture Assessment Framework 2.0

IPv6 Policy Alignment extension

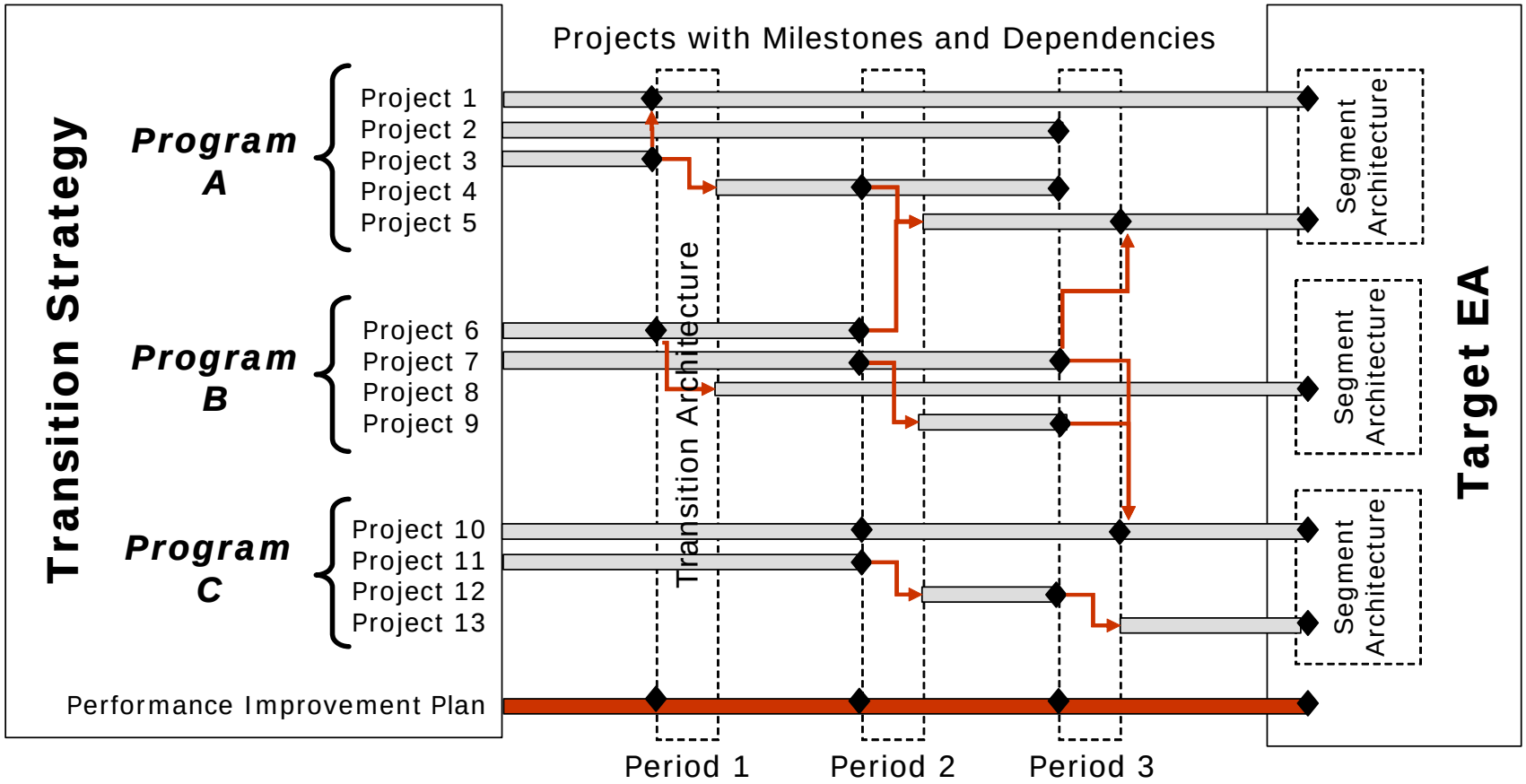
OMB will look at:

- IRM Strategic Plan
- EA Transition Strategy
- IPv6 Progress Report
- IPv6 Device Inventories
- IPv6 Impact Analysis

OMB will look for:

- ✓ Compliance with OMB Memorandum 05-22
- ✓ Established IPv6 milestones
- ✓ Progress against milestones
- ✓ Integration with other IT initiatives

EA Transition and Sequencing Plans



EA Assessment Framework 2.0

OMB will use EA Assessment Framework 2.0* to assess agency compliance with OMB Memorandum 05-22, and overall progress with IPv6

Level 1 Practices	*Activities*: Agency has assigned an official to lead and coordinate agency planning for IPv6 transition. *Artifacts*: Memorandum signed by the agency CIO documenting appointment and duties/responsibilities thereof
Level 2 Practices	*Activities*: agency has completed an inventory of existing routers, switches, hardware firewalls, and other IP-compliant devices and technologies. Artifacts: Agency IP device inventory using guidance in attachment A, OMB M-05-22
Level 3 Practices	*Activities*: agency has performed an impact analysis to determine fiscal and operational impacts and risks of migrating to IPv6. Artifacts: Agency IPv6 impact analysis document using guidance in attachment B, OMB M-05-22
Level 4 Practices	*Activities: agency has developed an IPv6 transition plan and integrated this plan with the agency EA transition strategy.* *Artifacts: Agency EA transition strategy with integrated IPv6 transition plan addressing areas listed in attachment C, OMB M-05-22.*
Level 5 Practices	*Activities: agency has migrated its network backbone to IPv6, and provided a capability for all its networks to interface with this backbone.* *Artifacts: Agency SDLC (systems development lifecycle) artifacts documenting the updated network infrastructure.*

*** Excerpted from EA Assessment Framework 2.0, still in draft form…**

Agency compliance

On 11/15/05, OMB received the names of agency IPv6 points of contact, as well as the first inventory of IP-aware hardware devices.

Large agency status (23 agencies, excluding DoD)

✓ 87% large agency compliance with 11/15/05 milestone (20 of 23)

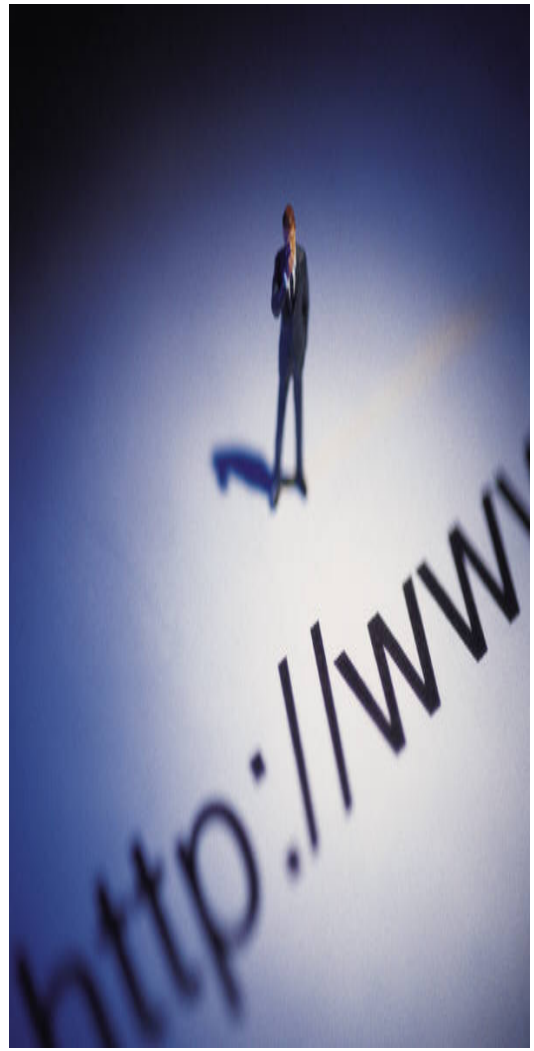
Small agency status (100+ small agencies)

✓ 36% small agency compliance with 11/15/05 milestone (38 of 106)

Next Steps: **To facilitate cross-agency collaboration and discuss IPv6 oversight, OMB and the CIO Council's Architecture and Infrastructure Committee (AIC) will convene a meeting of all agency IPv6 leads in the coming weeks (date TBD). Agencies will be contacted about this meeting by the CIO Council. The list of IPv6 leads will be sent to agencies via the CIO Council listserv in advance of this meeting.**

What else is being done to support agencies?

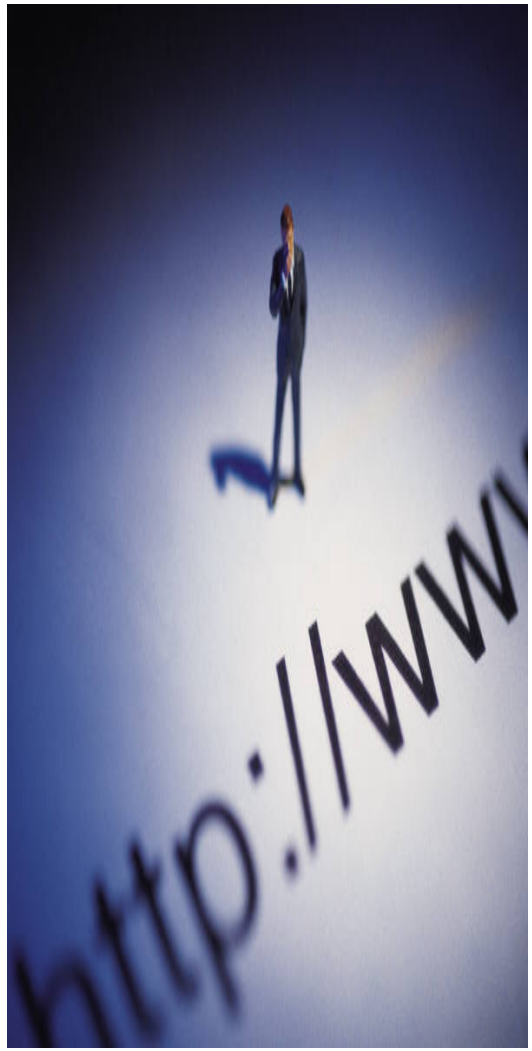
- Guidance
- Portal
- Acquisition policy
- Address-space acquisition
- Standards/guidelines



What IPv6 guidance will be published?

- **Chapter I – Integrating IPv6 into EA Planning Activities**
- **Chapter II – Developing an IPv6 Transition Plan**
- **Chapter III – Governance**
- **Chapter IV – Acquisition/Procurement**

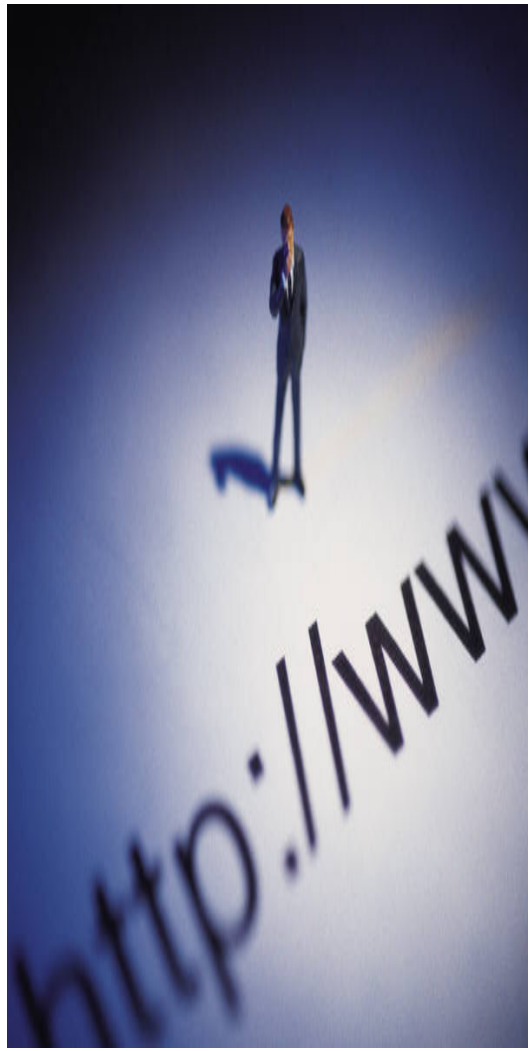
More in-depth, technical guidance will need to come out of an IPv6 working group…



Guiding Principles for IPv6 Planning

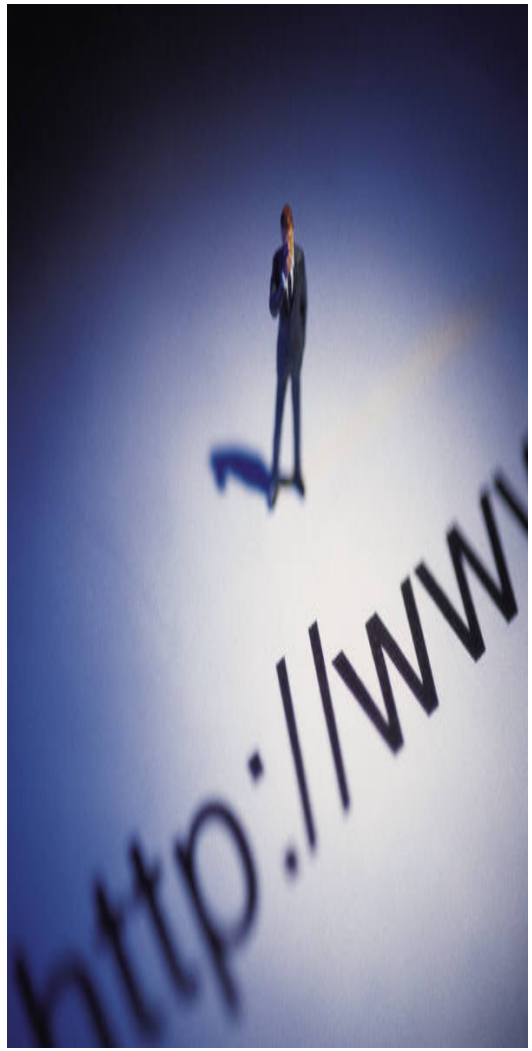
- **IPv6 transition IS:**
  - A strategic enterprise transformation
  - Focused on new business capabilities
  - Future-oriented – an opportunity for agencies to **innovate**
  - Enterprise-architecture driven
  - An initiative that should be integrated with other infrastructure efforts (e.g. COOP, HSPD-12)

- **IPv6 transition IS NOT:**
  - Just like Y2K
  - Just a network “upgrade”
  - Just the CIO’s problem



In Summary

- Agencies will become “IPv6-ready” – ready for the future - by implementing IPv6 capability into their network backbone.
- The Federal government wants to lead by example, and spur development of IPv6 products in the market place.
- IPv6 will be a strategic enterprise transformation. Over the long-term, it will enable a new communication paradigm.
- IPv6 is an opportunity for innovation in the public and private sectors.
- OMB will be looking at each agency’s IPv6 milestones (for backbone transition) in February 2006.
- Agencies are making excellent progress, but need to begin working together to share transition best practices, solutions, and challenges.
- The CIO Council will be convening a meeting of all agency IPv6 leads in the coming weeks.
- IPv6 is not just the CIO’s problem. Agency leadership and staff at all levels need to be engaged and educated.



Some IPv6 Government Resources

- http://www.whitehouse.gov/omb/memoranda/fy2005/m05-22.pdf - OMB IPv6 memorandum
- http://www.cio.gov/documents/Integrating_IPv6_into_Agency_EA_Planning.doc - Chapter I of CIO Council IPv6 guidance
- http://www.ntia.doc.gov/ntiahome/ntiageneral/ipv6 - National Telecommunications and Information Administration; IPv6 white papers
- http://ipv6.disa.mil – Defense Information Systems Agency IPv6 web site
- http://www.osec.doc.gov/cio/oipr/SITP_IPv6_addendum.htm - Department of Commerce